



## **Department of the Environment**

### **Assessing and Assigning Surface Water Treatment Rule**

### **Numbers for Fractured Rock Ground Water Sources**

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# GWUDI is:

❑ Ground Water Under the Direct Influence of Surface Water





# History of GWUDI:

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- ❑ According to the 1996 Amendments to the Safe Drinking Water Act, Federal and State regulations require that all public water systems be evaluated to determine if their ground water supply is under the influence of surface water.





# Surface Water Treatment Rule (SWTR)Numbers

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- ❑ Sources were divided up into four groups depending on susceptibility.
- ❑ Numbers 1 – 4. One being determined least susceptible and four being most susceptible.
- ❑ Developed sampling procedures for each group. Each sample was taken from a raw tap and evaluated for Total Coliform, Fecal Coliform, Turbidity, Temperature, pH and Chlorine Residual.





## SWTR Group 4 sampling procedures:

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- ❑ Two dry raw samples and two wet sets.
  - Dry sample: raw sample taken when there is at least 7 days with  $\leq 0.5$ " of precipitation. Two dry samples must be collected at least a month apart.
  - Wet set: one raw sample per day for four consecutive days. Must start collection within 24 hrs. of  $\geq 0.5$ " of rain. Wet sets must be collected at least a month apart also.
- ❑ MDE contracted a lab to do sampling for the sources that were level 4.





## SWTR Group 3 sampling procedures:

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- ☐ One wet sample
  - One raw sample taken within 24 hours of  $\geq 0.5$ " of rain.
- ☐ MDE sent out letters to owners requiring that the GWUDI sample be performed before a deadline.





## SWTR Group 2 sampling procedures:

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- ☐ One dry sample
- One raw sample taken anytime.
- ☐ MDE sent out letters to owners requiring that the GWUDI sample be performed before a deadline.





# SWTR Group 1:

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- ☐ No sampling.
- ☐ Sources considered to have minimal risk for GWUDI unless there is a defect with the well because they are drilled into unconsolidated sediment.







# Recap

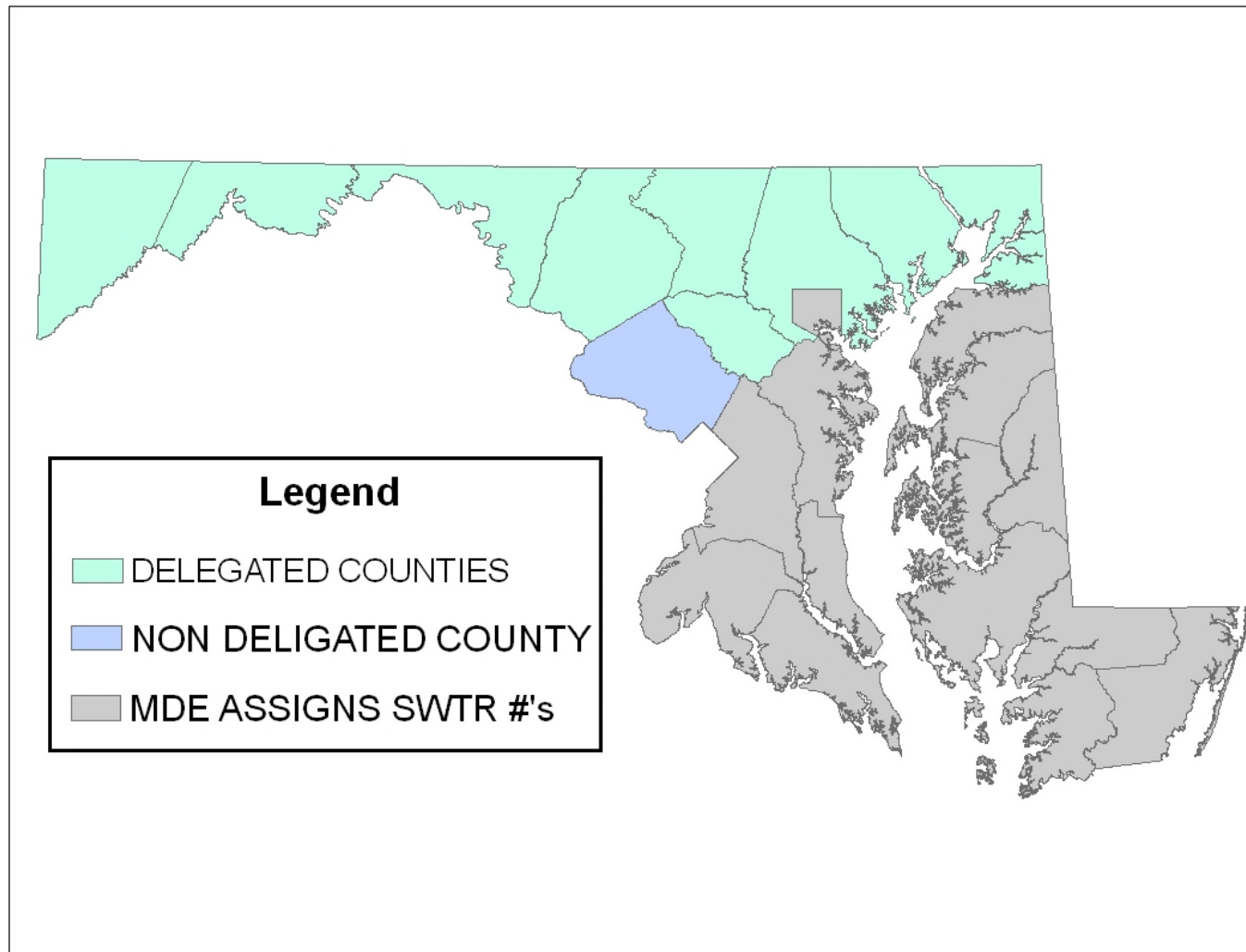
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- ☐ MDE made SWTR assignments.
- ☐ MDE either contracted a lab to do the sampling (level 4 sources) or sent out notification letters to the system owners informing them of the sampling requirements (level 2 and 3 sources)
- ☐ MDE gathered sample data and made GWUDI determinations for sources.
- ☐ Now what do we do for new sources?





# The Future of SWTR Assignment for Transient Non Community Sources





# What is the process for assigning SWTR numbers?

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- ☐ A new system or source is added.
- ☐ Use Flow Chart to make SWTR number assignment.
- ☐ Gather sample data for that source.
- ☐ Turn in SWTR Assignment form at least quarterly. Counties could send them along with Initial Sanitary Surveys or individually as they come in. It's up to the Counties how they want to do it as long as it's according to the Delegation Agreement.





# Form for SWTR Assignment and Sampling Data

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## Surface Water Treatment Rule Assignment

**System Name:**\_\_\_\_\_

**PWSID:**\_\_\_\_\_

**Well Tag Number:**\_\_\_\_\_

**SWTR Number:**\_\_\_\_\_

**Attached raw sampling data (may include Certificate of Potability sample if applicable):**

\_\_\_\_\_**Raw sample collected to complete SWTR 2 sampling requirements of one raw sample taken at any time.**

\_\_\_\_\_**Raw sample collected within 24 hours of half an inch of rainfall to complete SWTR 3 sampling requirements.**

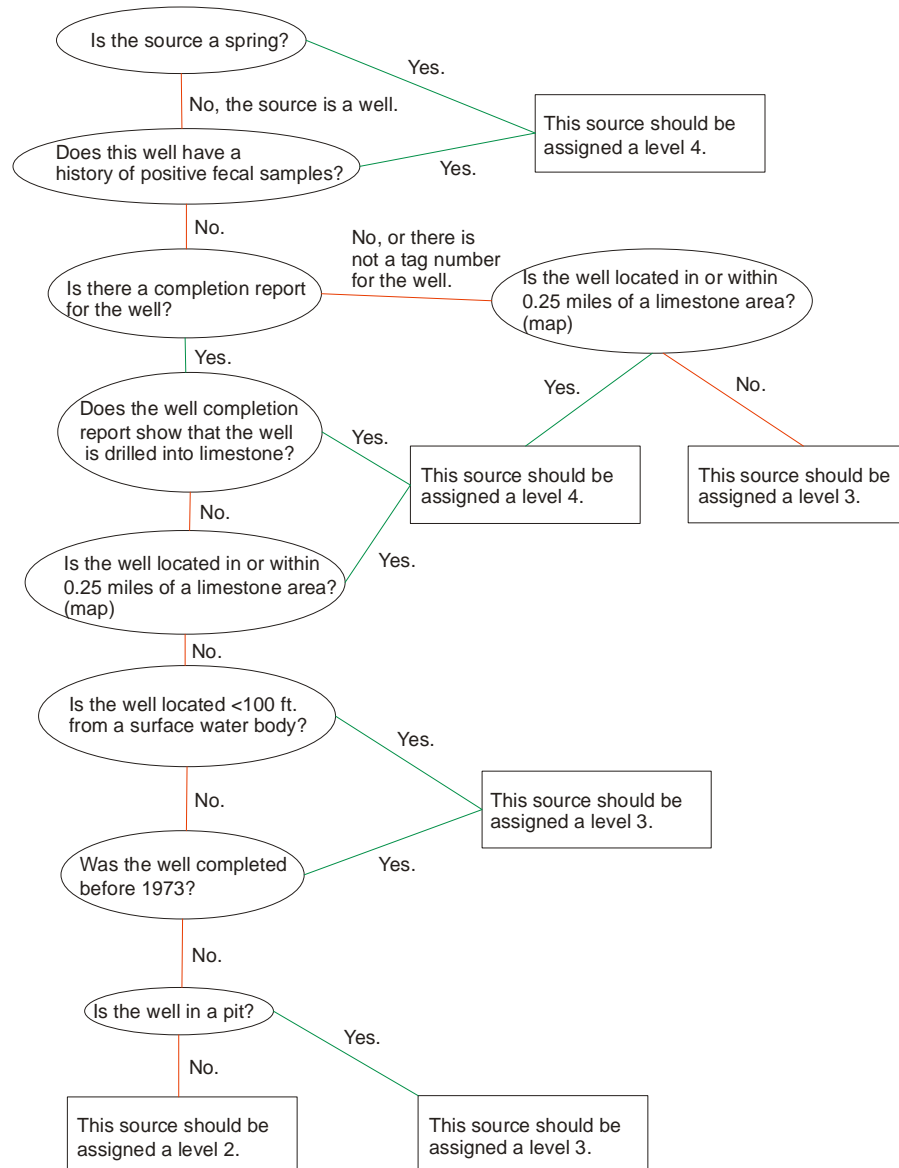
\_\_\_\_\_**Two wet sets of samples and two dry samples to complete SWTR 4 sampling requirements.**





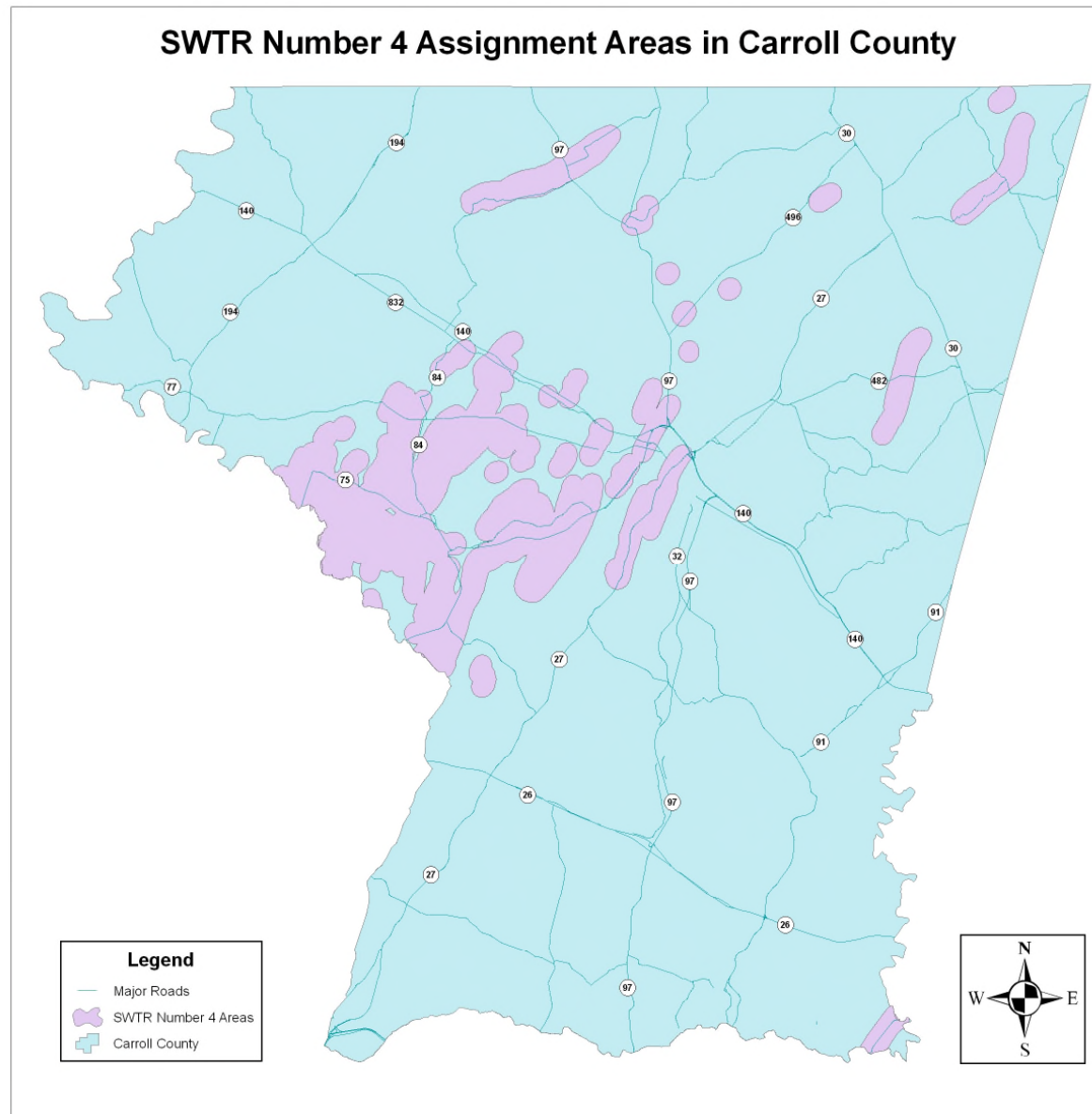
# Flow Chart for SWTR Assignment

Surface Water Treatment Rule Assignment Chart  
for Fractured Rock Sources





# Map of Buffered Susceptible Formations





# Maryland Geological Survey Website

❑ <http://www.mgs.md.gov/esic/geo/index.html>

Cannot find server - Microsoft Internet Explorer

File Edit View Favorites Tools Help


Back Forward Stop Home Search Favorites

Address <http://www.mgs.md.gov/esic/geo/index.html> Go Links

*Please do not attempt to use these maps for GIS, scientific, legal or other mission-critical purposes. They are out-of-date, cannot be georeferenced, and are too general for local or regional use. These maps are to be used solely for historical and illustrative purposes only.*

### Geologic Map of Maryland (1968) Index

To view a map click on a county in the index map below or the list to the right  
\* indicates detailed views available for these counties



- [Allegany\\*](#)
- [Anne Arundel\\*](#)
- [Baltimore\\*](#)
- [Calvert\\*](#)
- [Caroline](#)
- [Carroll\\*](#)
- [Cecil\\*](#)
- [Charles](#)
- [Dorchester](#)
- [Frederick\\*](#)
- [Garrett\\*](#)
- [Harford\\*](#)
- [Howard\\*](#)
- [Kent](#)
- [Montgomery\\*](#)
- [Prince Georges\\*](#)
- [Queen Annes](#)
- [St. Marys](#)
- [Somerset](#)
- [Talbot](#)
- [Washington\\*](#)
- [Washington, D.C.](#)
- [Wicomico](#)
- [Worcester](#)

#### Map Legends:

- [Allegheny Plateau and Valley and Ridge](#)
- [Rocks of the South Mountain Anticlinorium and Frederick Valley](#)
- [Western Piedmont Metasedimentary Rocks](#) <sup>(1)</sup>
- [Eastern Piedmont Metasedimentary Rocks](#) <sup>(1)</sup>
- [Eastern Piedmont Plutonic Rocks](#)
- [Coastal Plain Rocks and Sediments](#)

\* These maps have been divided into smaller sections for

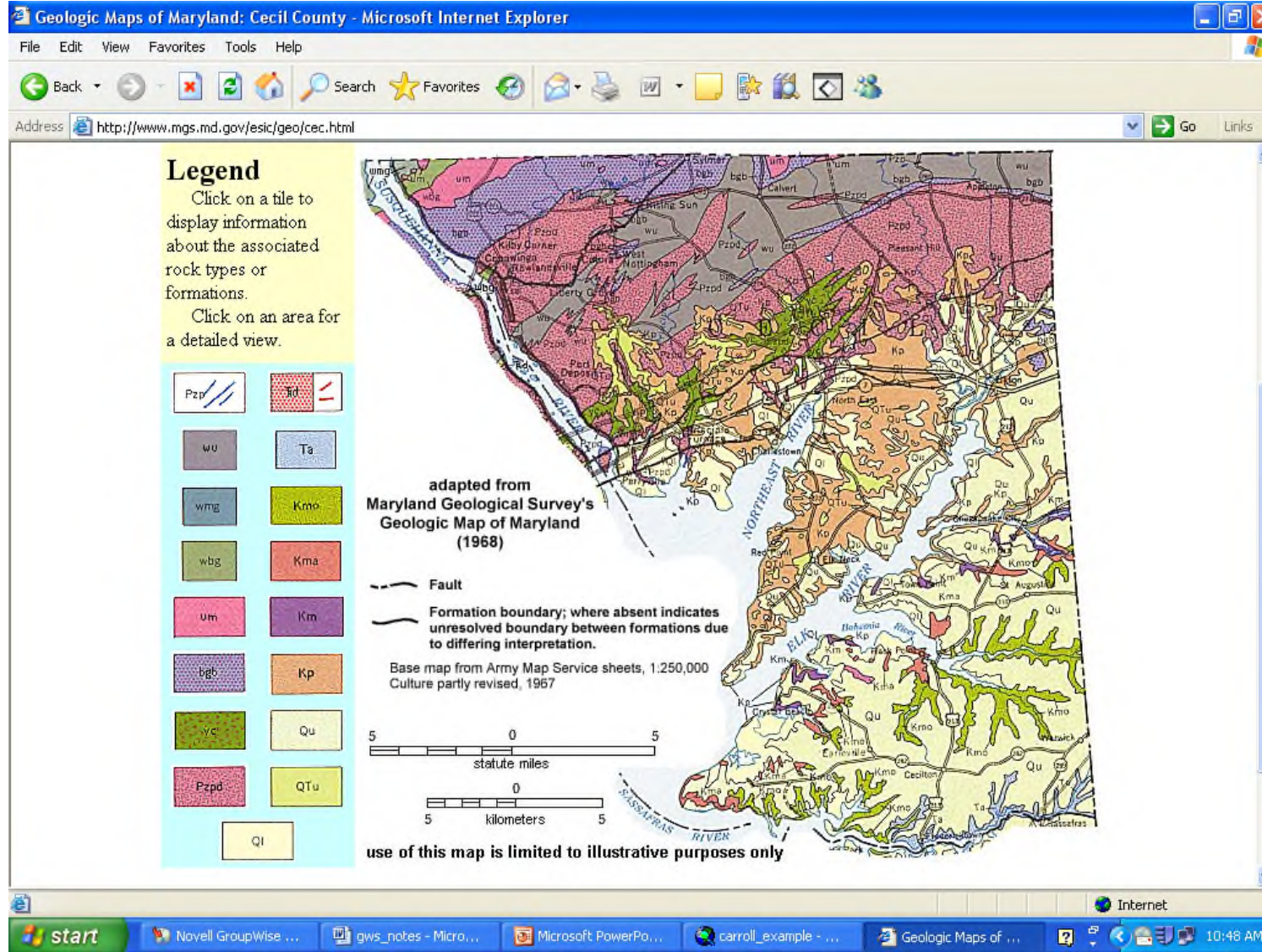
start Novell GroupWise ... gws\_notes - Micro... Microsoft PowerPo... Microsoft Photo Ed... Cannot find server... 3:33 PM







# Website Sample Map







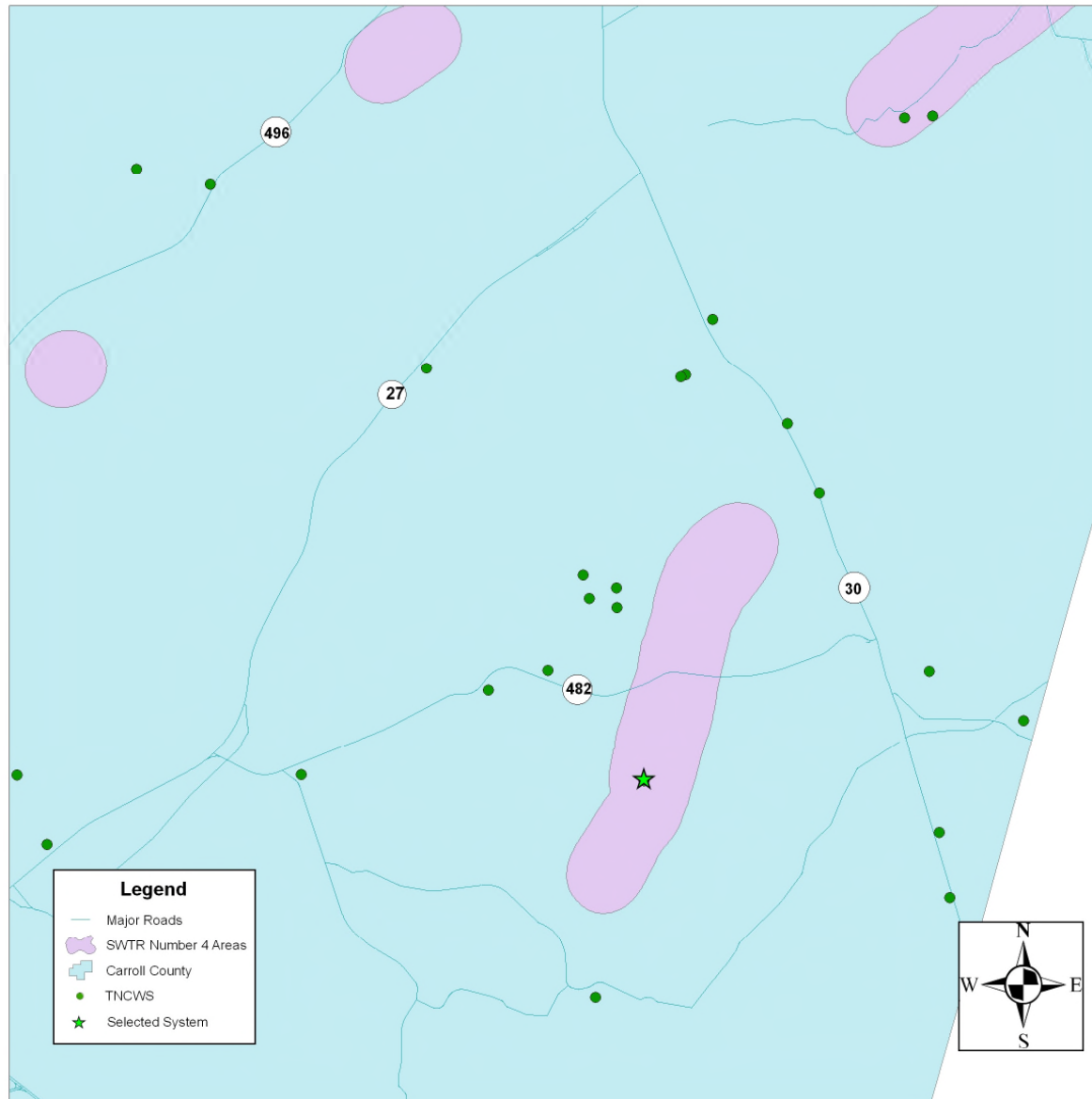
# List of Susceptible Aquifers

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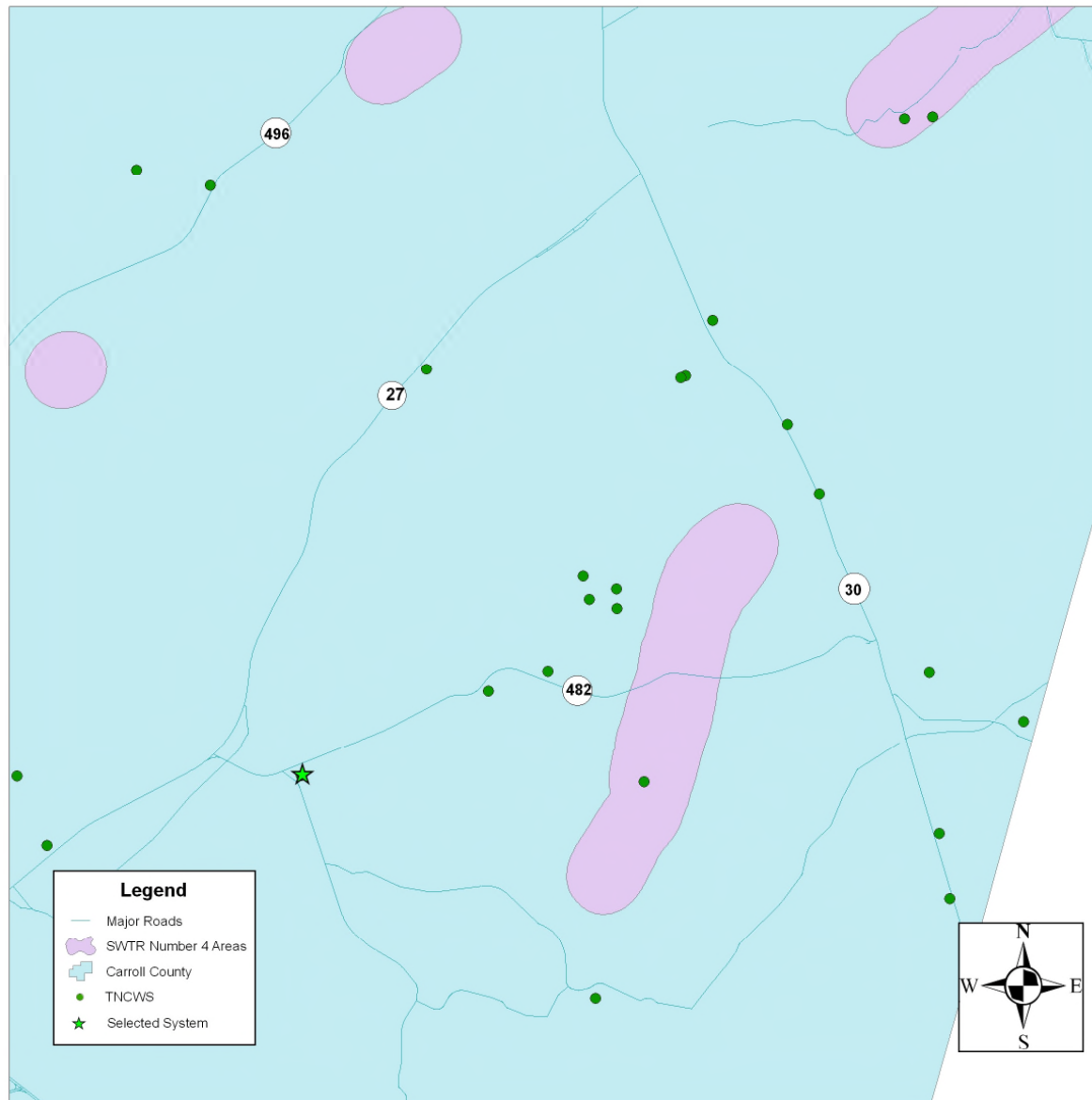
- ☐ Cockeysville Marble
- ☐ Silver Run Limestone
- ☐ Sams Creek Metabasalt
- ☐ Wakefield Marble
- ☐ Helderberg Group
- ☐ Keyser Limestone
- ☐ Chambersburg Limestone
- ☐ New Market Limestone
- ☐ Row Park Limestone
- ☐ St. Paul Group
- ☐ Beekmantown Group
- ☐ Grove Limestone
- ☐ Pinesburg Station Dolomite
- ☐ Rockdale Run Formation
- ☐ Stonehenge Limestone
- ☐ Conococheage Limestone
- ☐ Elbrook Formation
- ☐ Frederick Limestone
- ☐ Tomstown Dolomite



# Examples



# Examples





# **Maryland Department of the Environment**

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